IN THE DRAWINGS:

The applicant has submitted concurrently herewith a request for approval of drawing changes in which "Prior Art" label is added to Figures 1A-1H and 2A-2B as marked by red ink. The applicant has also submitted replacement sheets for the amended drawings.

REMARKS

In the office action, the examiner objected to the drawings on the ground that Figures 1A-1H and 2A-2B lack a "Prior Art" legend. Accordingly, the applicant has submitted concurrently herewith a request for approval of drawing changes in which "Prior Art" label is added to Figures 1A-1H and 2A-2B as marked by red ink. The applicant has also submitted concurrently herewith replacement sheets for the amended drawings.

In the office action, the examiner objected to the amendment in the specification under 35 U.S.C. 132(a) on the ground that it introduces new matter into the disclosure. It is stated that the change from "visible artifacts" to "visible objects" introduces new matter. The applicant disagrees with the objection because the amendment was made to clarify the description by using the consistent terms. In the original specification, claims and abstract, the applicant uses the terms "visible object" about one hundred seventeen (117) times. Thus, the applicant has tried to correct the specification so that the description be consistent throughout the application. Nevertheless, in this response to the office action, the applicant has amended back the specification because the applicant does not want to waste much time and money for this issue.

The examiner rejected Claims 1-20 under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. It is stated that the description is insufficient regarding

"detecting a condition in which blank scroll will arise when the screen is scrolled, where the blank scroll is a situation of the screen which does not show any visible object thereon when the screen is scroll" in Claims 1 and 11. The examiner does not show any basis why the description is insufficient. Thus, the applicant does not understand why this rejection comes out because this feature is described fully in several occasions in the disclosure.

First of all, the "blank screen" is defined in the description at page 3, line 27 to page 4, line 4, which reads as follows:

> In the navigation system, such areas outside of the current screen can be displayed by scrolling the screen. Figures 2A and 2B show an example of display of the scroll function for shifting the map screen on the display. By operating scroll keys in up-down and right-left directions, what was outside of the screen view of Figure 2A becomes visible within the screen view of Figure 2B. However, when a user travels in a large plain area such as a prairie, a desert or a lake, etc., the navigation system merely shows a blank screen since the areas scrolled do not contain any visible objects such as a pond, a building, other roads, etc. Hereafter, such a situation in the scroll operation is referred to as "blank scroll".

As noted above, the meaning of the "blank screen" is described. Figure 4 shows the blank scroll condition and Figure 13 shows the blank scroll condition and the effect of the present invention that can avoid such blank scroll. At page 8, lines 10-12, it is clearly stated that Figure 4 shows an example of blank scroll condition, the details of which is described at page 4, lines 5-29, which reads as follows:

> An example of situation where the blank scroll arises is shown in Figures 3 and 4. Figure 3 shows a map image where the user (vehicle position VP) is driving

> toward the desert area which has no road. A scale indicator 19 indicates the scale of the map image on the display screen 21. Suppose the user scrolls the screen 21 in the direction shown by the arrows in Figures 3 and 4 where there is no specific objects exists in the wide desert area, the screen 21 merely shows the blank screen with a single color.
>
> This is because the map data from the map data storage (ex. DVD, hard disc in the navigation system) contains only position data (latitude and longitude) of the area but no segment data. Thus, as shown in Figure 4, when the screen 21(1) is scrolled toward the scroll direction indicated by the arrow, the navigation system displays blank screens 21(2), 21(3)..., until the screen 21(n) which contains a visible object (pond 23 in the desert). Since the blank scroll screen such as screen 21(2) or 21(3) does not show anything thereon, the user can lose sense of direction, feels uneasy, and is confused. In such a situation, the user may keep scrolling the display until an object can be seen on the display. The user may also zoom out the display to see a wider perspective of the map image. However, such operations of the navigation system take some time and distract the user's attention from the safe driving.

As noted above, the blank scroll condition is fully described which is exemplified by the screens 21(2), 21(3)...in Figure 4. The specific example for detecting the blank scroll condition is given, for example, at page 13, lines 1-13, which reads as follows:

> The scroll operation controller 47 is able to detect such blank scroll condition by, for example, checking whether there is any change in the color of the map image to be displayed on the screen 21, or whether there is any data indicating a visible object in the map data for the display range of the screen 21. Upon detecting the blank scroll condition, the scroll operation controller 47 requests the map memory 34 to read out the map data ahead in the scroll direction. If the map memory 34 does not store sufficient map data, the map memory 34 retrieves the requested map data from the map data storage 31. The scroll operation controller 47 examines the map data in the scroll direction until any visible object is found therein.

Another specific example of the blank scroll condition and method for detecting the blank scroll condition is given, for example, at page 14, lines 8-21, which reads as follows:

> First, when the scroll key such as on the remote controller 37 is operated by the user, the navigation system checks whether there is any condition that causes the blank scroll by, for example, scanning the display to see if there is any color difference on the screen or checking the map data for the screen. As noted above, such condition arises when the user scrolls the screen of the map image where there is no map data of visible objects. Typically, the map data in the map data storage 31 (Figures 5 and 6) do not include any data of visible object other than latitude/longitude data for the middle of a large lake, prairie, desert, jungle, and the like. Thus, if the user scrolls the screen of the map image on the lake, prairie, desert, etc., the conventional navigation system displays only a blank screen.

As discussed above, the meaning of the blank screen is described, the meaning of the blank scroll condition is described, and the specific way of detecting the blank scroll condition is described in a way to enable one skilled in the art. The flow chart of Figure 12 also shows the steps of detecting the blank scroll condition. Because the subject matter is sufficiently described in the original specification and drawings, the rejection under 35 U.S.C. 112, first paragraph is not applicable to the feature "detecting a condition in which blank scroll will arise when the screen is scrolled, where the blank scroll is a situation of the screen which does not show any visible object thereon when the screen is scroll".

The examiner rejected Claims 1-20 under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement.

It is stated that the description is insufficient regarding "shape point that defines a shape of a visible object" in Claims 1 and 11. The examiner states that this limitation was not in the original disclosure. Based on the same reason, the examiner rejected Claims 1-20 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter of the invention. This is another stupidity of the office action which is probably caused by lack of basic understanding of a navigation system and map data used by a navigation system. The shape point is defined in the description, for example, at page 16, lines 3-11, which reads as follows:

> In the example of Figure 7, the pond 23 has a shape point P that defines its shape. Although only one shape point P is shown in Figure 7, the pond 23 has a large number of shape points, and the evaluation will also be made on the other shape points as will be explained in detail. The number of shape points that a visible object has depend on the size and shape of the visible object. Some visible object may have only a few shape points and others may have several hundreds of shape points.

As noted above, the shape point is defined in the original description. As is well known in the art, the map data for a navigation system include information (shape points) showing positions and shapes of objects such as roads, buildings, bridges, ponds, parks, etc. Each shape point is expressed by latitude and longitude data to define a position of a point of an object. Thus, each shape point defines at least a part of shape of an object, i.e., each shape point defines a shape of an object in combination with other shape points if necessary. Therefore, the recitation of

"shape point that defines a shape of a visible object" in Claims 1 and 11 is correct and supported by the description.

Further, the specific way of evaluating the shape point is clearly described with reference to Figures 7-10. In the present invention, each shape point of a visible object is evaluated to determine whether a particular shape point of the visible object will be within a display range. For example, from page 16, line 22 to page 17, line 8 describes a specific example how the shape point is evaluated for the purpose of the present invention, as follows:

> The navigation system determines whether the pond 23 should be visible by comparing the angles α and β with the angle θ in Figure 7. More particularly, the navigation system checks to see whether the condition which satisfies the relationship of "$\alpha>\theta$ and $\beta>\theta$" or "$\alpha<\theta$ and $\beta<\theta$". If both of the angles α and β are either larger than the angle θ or smaller than the angle θ, i.e., "$\alpha>\theta$ and $\beta>\theta$" or "$\alpha<\theta$ and $\beta<\theta$", then the point P of the pond 23 is not visible. In other words, if those conditions are not met, the navigation system determines that the object should be visible. In the present case of Figure 7, because the angle α is smaller than the angle θ while the angle β is larger than the angle θ, the point P of the pond 23 is visible.
>
> As explained above, the pond 23 has a plurality of shape points. Since the pond 23 is a relatively large object, the navigation system checks as to which part of the pond or all of the pond 23 should be displayed. Thus, the navigation system will check each shape point of the pond 23. In Figure 8, the navigation system checks the shape point P_n of the pond 23 which is located closer to the display range line 77 than the point P in Figure 7.

In short, the concept of "shape point" is well known to a person skilled in the art. The rejections under 35 U.S.C., first and second paragraphs noted above, are caused by the lack of basic understanding of the technology involved in the navigation system.

Accordingly, the applicant requests that these unreasonable rejections be withdrawn.

The examiner rejected Claims 1-8 and 11-18 under 35 U.S.C. 102(e) as being anticipated by Yokota et al. (U.S. Patent No. 6,640,185). The applicant respectfully disagrees with the examiner regarding the interpretation of the technology disclosed by the cited Yokota et al. reference. Nevertheless, the applicant has amended Claims 1 and 11 to more clearly define the present invention in view of the technology disclosed by the cited Yokota el al. reference. The cited Yokota et al. reference does not show or suggest the essential features of the present invention recited in Claims 1 and 11 as discussed below.

As recited in Claims 1 and 11 concurrently amended, the essential features of the present invention reside in the fact that the navigation system (1) detects the condition in which blank scroll will arise when the screen is scrolled, (2) reads the map data ahead in the scroll direction to find any visible object when the blank scroll condition is detected, (3) evaluates the shape point that defines a shape of the visible object to determine whether any part of the visible object should come within a display range of the screen when the screen is further scrolled, and (4) displays the location which shows the visible object without showing a blank screen when any part of the visible object should come within the display range.

As defined in Claims 1 and 11, the blank scroll is a situation of the screen in which the screen will not show any visible object thereon when the screen is scrolled in the specified direction. As discussed above with respect to the rejection under 35 U.S.C. 112, first paragraph, the blank scroll and the blank scroll condition are clearly described in the original disclosure. In the amendment, the applicant clarified that the navigation system displays the location which shows the visible object without showing a blank screen when any part of the visible object should come within the display range.

The cited Yokota et al. reference discloses a display method and apparatus for navigation system which enables a user to operate the navigation system with use of a reduced number of control keys without adversely affecting the safe driving of the vehicle. The feature of the invention disclosed by the cited Yokota et al. reference resides in the fact that switching between the map zoom screen and the map screen is performed by operating only the selection key, and adjustments of the zoom scale in the map zoom screen and the scroll of the map image are conducted by operating only the scroll means. Because of such a special arrangement of the key functions, the number of keys required for operating the navigation system is substantially reduced.

With respect to the feature (1) noted above, the present invention detects the condition in which blank scroll will arise when the screen is scrolled. The cited Yokota et al. reference

shows a scroll operation of the screen, however, it is completely silent about the blank scroll or avoiding the same. Claims 1 and 11 of the present invention define the "blank scroll" as a situation of the screen in which the screen will not show any visible object thereon when the screen is scrolled in the specified direction. Further, the cited Yokota et al. reference does not show anywhere the idea of detecting the condition that arises the blank scroll. Although the examiner indicated Figs. 1A, 1B, 4 and 19 in the office action, these drawings have no relationship with the black scroll or blank scroll condition of the present invention. Therefore, the essential feature (1) of the present invention is not shown or suggested by the cited Yokota et al. reference.

With respect to the feature (2) noted above, the present invention reads the map data ahead in the scroll direction to find any visible object when the blank scroll condition is detected. Although the cited Yokota et al. reference shows a scroll operation of the screen, it is completely silent about the blank scroll or avoiding the same by reading the map data ahead. Further, the cited Yokota et al. reference does not show any idea of finding any visible object in the scroll direction when the blank scroll condition is detected. Although the examiner indicated column 4, lines 1-28, column 5, lines 2-30, column 8, lines 44-60, column 9, lines 33-44, and column 10, lines 3-10, the descriptions in the specified sections of the cited Yokota et al. reference do not have

any relationship with the blank scroll, blank scroll condition, or the searches for the visible object in the scroll direction. Therefore, the essential feature (2) of the present invention is not shown or suggested by the cited Yokota et al. reference.

With respect to the feature (3) noted above, the present invention evaluates the shape point that defines a shape of the visible object to determine whether any part of the visible object should come within a display range of the screen when the screen is further scrolled. As discussed above, an example of specific ways for evaluating the shape point is described with reference to Figures 7-10. Although the cited Yokota et al. reference shows a scroll operation of the screen, it is completely silent about the blank scroll or avoiding the same. Claims 1 and 11 recite the shape point as a point which defines the shape of the visible object. It is apparent that the cited Yokota et al. reference is completely silent about the shape point of the visible object. Further, the cited Yokota et al. reference does not show any idea of evaluating the shape points of the visible object because the cited Yokota et al. reference does not show any idea of finding the visible object. Although the examiner indicated column 4, lines 1-28, column 5, lines 2-30, column 8, lines 44-60, column 9, lines 33-44, and column 10, lines 3-10, the descriptions in the specified sections of the cited Yokota et al. reference do not have any relationship with the blank scroll, blank scroll condition, searches for the visible object, or the evaluation of the shape

points of the visible object. Therefore, the essential feature (3) of the present invention is not shown or suggested by the cited Yokota et al. reference.

With respect to the feature (4) noted above, the present invention displays the location of the visible object without showing the blank screen when any part of the visible object should come within the display range. Although the cited Yokota et al. reference shows a scroll operation of the screen, it is completely silent about the blank scroll or avoiding the same. Accordingly, the cited Yokota et al. reference does not show any idea of displaying the location of the visible object without showing the blank screen. Although the examiner indicated column 4, lines 1-28, column 5, lines 2-30, column 8, lines 44-60, column 9, lines 33-44 and column 10, lines 3-10, the descriptions in the specified sections of the cited Yokota et al. reference do not have any relationship with the blank scroll, blank scroll condition, the evaluation of the shape points of the visible object, or displaying the visible object without showing the blank screen. Therefore, the essential feature (4) of the present invention is not shown or suggested by the cited Yokota et al. reference.

Since none of the essential features of the present invention are shown or suggested by the cited Yokota el al. reference, the applicant believes that the rejection under 35 U.S.C. 102(e) is no longer applicable to the present invention.

In the office action, the examiner rejected Claims 9, 10, 19 and 20 under 35 U.S.C. 103(a) as being unpatentable over Yokota et al. (U.S. Patent No. 6,640,185) in view of Adachi (U.S. Patent No. 6,662,101). Claims 9, 10, 19 and 20 include all of the limitations of the base claim, Claim 1 or 11. As discussed above, because the cited Yokota et al. reference does not show or suggest any of the essential features of the present invention defined in Claim 1 or 11, the invention defined by Claims 9, 10, 19 and 20 is not obvious over the cited references taken singly or in combination.

Under the circumstances, the applicant believes that the present application is in the condition for allowance, and the applicant respectfully requests that the present application be allowed and passed to issue.

Respectfully submitted,

MURAMATSU & ASSOCIATES

Dated: 7/18/06

By: _____

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AMD-AP42.003
071806

Fig. 1A (Prior Art)

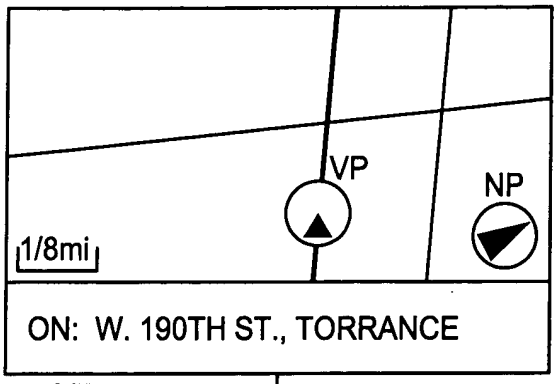


Fig. 1B (Prior Art)

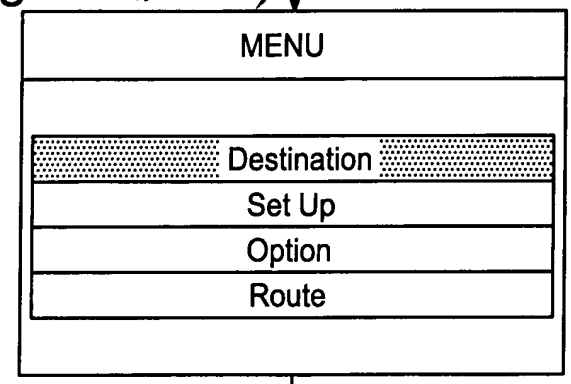


Fig. 1C (Prior Art)

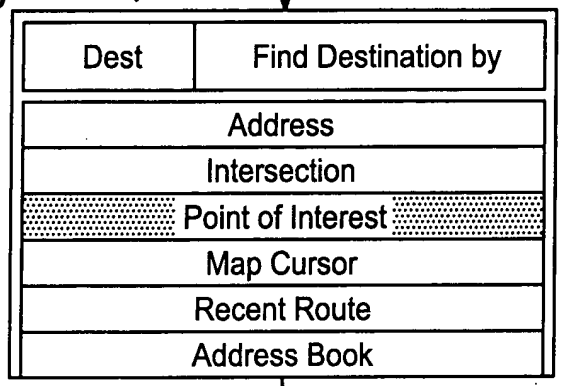


Fig. 1D (Prior Art)

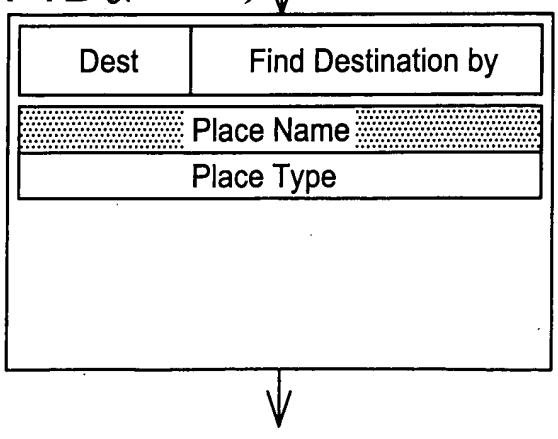


Fig. 1E (Prior Art)

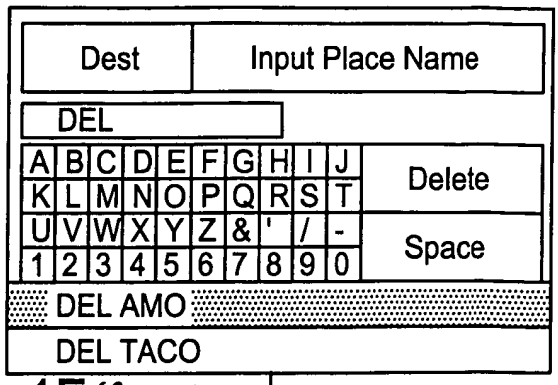


Fig. 1F (Prior Art)

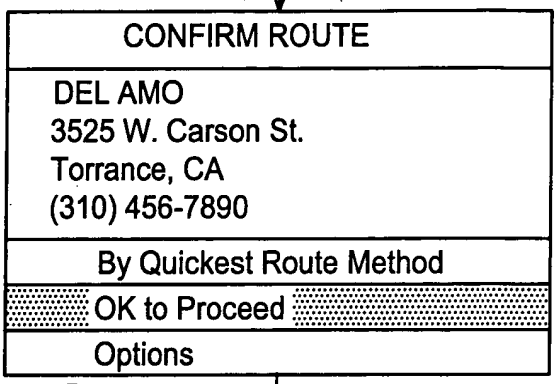


Fig. 1G (Prior Art)

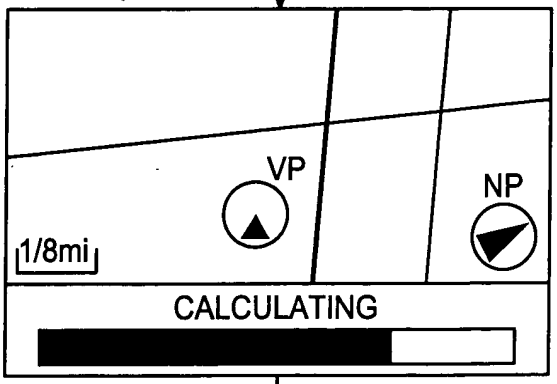


Fig. 1H (Prior Art)

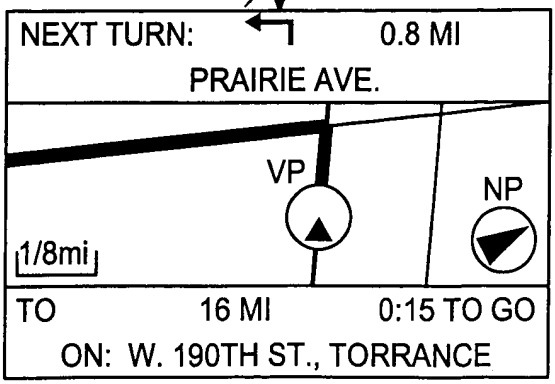
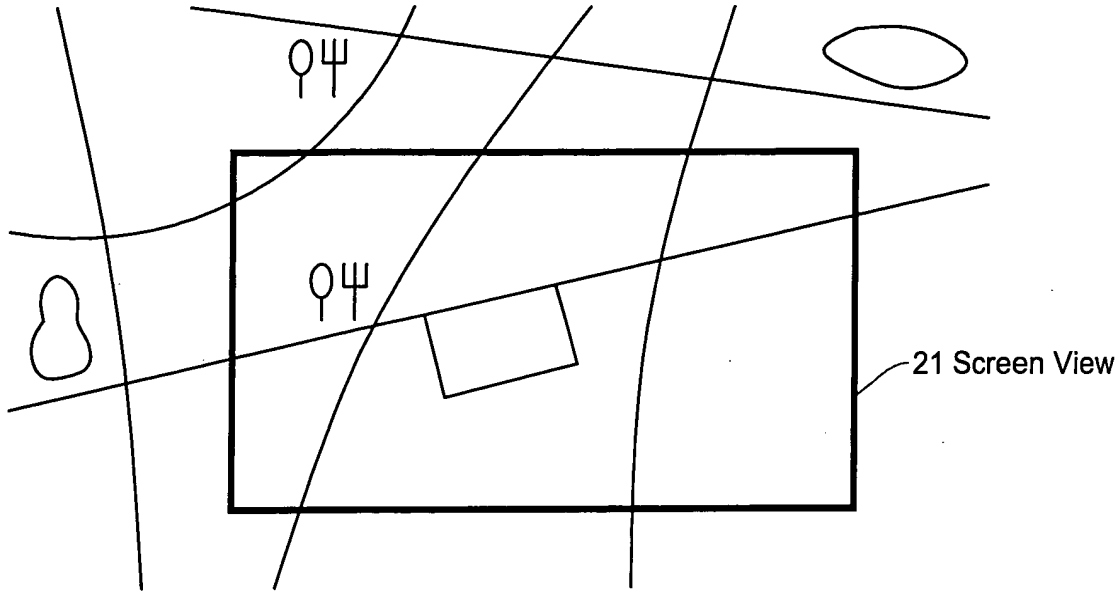


Fig. 2A (Prior Art)



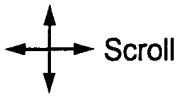


Fig. 2B (Prior Art)